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~~1.~~ In an Internet, a public mobile access data network providing a mobile node data access to the Internet and data access to the mobile node from the Internet when a point of attachment of the mobile node to the public mobile access data network changes.

5 2. The public mobile access data network of claim 1, wherein the public mobile access data network provides a public mobility service to locate current locations of mobile nodes so that the Internet is aware of a current point of attachment of one or more mobile nodes to the public mobile access data network.

10 3. The public mobile access data network of claim 2, wherein the public mobility service is provided independently of mobility services offered by a radio access technology specific network.

 4. The public mobile access data network of claim 3, wherein the radio access technology specific network includes GSM/GPRS.

15 5. The public mobile access data network of claim 3, wherein the radio access technology specific network includes D-AMPS.

 6. The public mobile access data network of claim 1, wherein the public mobile access data network is operated by an Internet service provider (ISP).

20 7. The public mobile access data network of claim 1, wherein the public mobile access data network provides data communication between a corresponding node by way of the Internet with a mobile node.

 8. The public mobile access data network of claim 1, further comprising:
a home agent router coupled to a backbone of the Internet;
plural foreign agent routers coupled to the home agent router for communicating
with one or more of the mobile nodes,

25 wherein a data tunnel is established between the home agent router and one of the foreign agent routers to communicate data with one or more of the mobile nodes.

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9. The public mobile access data network of claim 8, wherein the home agent router is located at a point of presence near the Internet backbone.

10. The public mobile access data network of claim 8, wherein one or more of the foreign agent routers is located at a local point of presence near a radio access point
5 where the mobile node attaches to the public mobile access data network.

11. The public mobile access data network of claim 10, wherein the mobile node de-attaches from the public mobile access data network at one of the foreign agents and re-attaches to the public mobile access data network at another one of the foreign agents.

12. The public mobile access data network of claim 8, wherein the home agent router and one of the foreign agents are co-located.

13. The public mobile access data network of claim 8, further comprising:
plural home agent routers configured as a virtual home agent network for one of the mobile nodes,

wherein one of the foreign agent routers serving the mobile node sends registration
15 messages to all home agent routers in the virtual home agent network.

14. The public mobile access data network of claim 12, wherein reciprocal control signaling between the home and foreign agents is reduced when the home and foreign agents are co-located.

15. The public mobile access data network of claim 8, further comprising:
20 plural home agent routers configured as a virtual home agent network for one of the mobile nodes,

wherein any one of the home agents in the virtual home agent network may forward data to and from the mobile node.

16. The public mobile access data network of claim 15, wherein if one of the home agents in the virtual home agent network is dysfunctional, another of the home agents in the virtual home agent network forwards data to and from the mobile node.

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17. The public mobile access data network of claim 15, wherein one of the home agents in the virtual home agent network closest to a corresponding node sending data to the mobile node via the Internet is selected to forward data to and from the mobile node.

5 18. The public mobile access data network of claim 17, wherein the closest home agent has a smallest routing metric relative to the corresponding node.

19. The public mobile access data network of claim 15, wherein one of the home agents in the virtual home agent network is co-located with a foreign agent router near a private data access network.

10 20. The public mobile access data network of claim 15, wherein one of the home agents uses a multi-exit discriminator parameter to advertise to the Internet a preferred entry pint to the public mobile access data network.

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15 21. The public mobile access data network of claim 1, further comprising:
a home agent mobility manager node coupled to a backbone of the Internet;
a home agent mobility tunnel server coupled to the backbone of the Internet;
plural foreign agents coupled to the home agent router for communicating with one or more mobile nodes over a radio interface,
wherein data tunnels between one of the home agent mobility tunnel servers and one of the foreign agents are established by the home agent mobility manager to
20 communicate data with one of the mobile nodes.

22. The public mobile access data network of claim 8, wherein the home agent and foreign agent routers communicate using a mobile internet protocol and the tunnel includes a label switched path that uses multi-protocol label switching.

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23. The public mobile access data network of claim 22, wherein as the mobile node moves from one foreign agent to another foreign agent, the home agent injects an address associated with the mobile node into the label switched path.

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25. The public mobile access data network of claim 24, wherein the first and second tunnels are established to be relatively static to handle different communications with different mobile nodes.

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31. The method in claim 30, wherein the public mobility service is provided independently of a mobility service offered by a radio access technology specific network.

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one or more of the mobile nodes; and


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presence near the Internet backbone.

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mobile nodes,

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39. The method in claim 38, wherein if one of the home agents in the virtual home agent network is dysfunctional, another of the home agents in the virtual home agent network forwards data to and from the mobile node.

40. The method in claim 38, further comprising:
one of the home agents using a multi-discriminator parameter to advertise to the Internet a preferred entry point to the public mobile access data network.

41. The method in claim 38, further comprising:
selecting one of the home agents in the virtual home agent network closest to a corresponding node sending data to the mobile node via the Internet to forward data to and from the mobile node.

42. The method in claim 38, wherein one of the home agents in the virtual home agent network is co-located with a foreign agent near a private data access network.

43. The method in claim 32, wherein the home agent and foreign agent routers communicate using a mobile internet protocol (IP) and the tunnel includes a label switched path that uses multi-protocol label switching (MPLS).

44. The method in claim 32, further comprising:
the home agent assigning the mobile node a home address, and
one the foreign agents assigning the mobile node a care-of address,
wherein the home agent associates the home address and the care-of address.

45. The method in claim 44, further comprising:
the home agent establishing the tunnel with the foreign agent using the care-of address using one or more desired tunnel attributes.

46. The method in claim 45, wherein the one or more desired tunnel attributes includes a class of service, bandwidth, traffic type, primary and secondary paths, or selective routing.

48. The method in claim 47, wherein the label switched routers encapsulate incoming data packets with a label, remove a label from outgoing data packets, and route packets by swapping labels at each label switched router along the label switched path.

50. The method in claim 47, further comprising:
aggregating label switched paths at the home agent for plural regional foreign
agents.

52. The method in claim 47, further comprising:
determining a primary label switched path and a redundant, secondary label
switched path corresponding to the tunnel.

53. The method in claim 47, further comprising:
selecting one of two or more label switched paths to balance a traffic load in the
public mobile data access data network.

54. The method in claim 47, further comprising:
setting in one or more hosting foreign agents an address of the home agent.

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65. The routing node in claim 63, wherein the first routing node is a foreign agent and the second routing node is a home agent and wherein the mobile IP controller stores an IP address of the home agent for the mobile node.

66. The routing node in claim 63, wherein the mobile IP controller determines the route of the label switched path corresponding to the tunnel to be something other than the shortest route.

67. The routing node in claim 63, wherein the mobile IP controller determines a primary label switched path and a redundant, secondary label switched path corresponding to the tunnel.

68. The routing node in claim 63, wherein the mobile IP controller selects a label switched path to balance a traffic load in the public mobile data access data network.

69. The routing node in claim 63, further comprising:
a resource reservation protocol controller coupled to the MPLS controller.

70. The routing node in claim 63, wherein the first routing node is a foreign agent, the second routing node is a home agent, and the mobile IP controller requests the MPLS controller to establish a table including the data tunnel, an address of the home agent, and an address of the mobile node.

71. The routing node in claim 63, wherein the mobile IP controller in the home agent adds one or more mobile node IP addresses to a label switched path having a destination address corresponding to a foreign agent care-of address.

72. The routing node in claim 58, wherein the first routing node is a foreign agent, and wherein the mobile IP controller forwards a mobile node registration to plural home agent routing nodes.

73. The routing node in claim 58, wherein the first routing node is a foreign agent, and wherein the MPLS controller establishes for a single communication with the mobile node plural label switched tunnels to plural home agent routing nodes.

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Parameter	Value	Unit
Temperature	25.0	°C
Pressure	1.0	atm
Flow rate	1.0	L/min
Sample concentration	1.0	mg/mL
Sample volume	1.0	μL
Injection volume	1.0	μL
Column name	Agilent 1200	
Column length	150	mm
Column ID	4.6	mm
Column material	Agilent 1200	
Mobile phase	Water	
Mobile phase	Acetonitrile	
Mobile phase	Formic acid	
Mobile phase	Ammonium formate	
Mobile phase	Ammonium acetate	
Mobile phase	Ammonium nitrate	
Mobile phase	Ammonium sulfate	
Mobile phase	Ammonium chloride	
Mobile phase	Ammonium bromide	
Mobile phase	Ammonium iodide	
Mobile phase	Ammonium fluoride	
Mobile phase	Ammonium hydroxide	
Mobile phase	Ammonium carbonate	
Mobile phase	Ammonium bicarbonate	
Mobile phase	Ammonium oxalate	
Mobile phase	Ammonium citrate	
Mobile phase	Ammonium tartrate	
Mobile phase	Ammonium succinate	
Mobile phase	Ammonium malate	
Mobile phase	Ammonium fumarate	
Mobile phase	Ammonium crotonate	
Mobile phase	Ammonium butyrate	
Mobile phase	Ammonium valerate	
Mobile phase	Ammonium caproate	
Mobile phase	Ammonium heptanoate	
Mobile phase	Ammonium octanoate	
Mobile phase	Ammonium nonanoate	
Mobile phase	Ammonium decanoate	
Mobile phase	Ammonium undecanoate	
Mobile phase	Ammonium dodecanoate	
Mobile phase	Ammonium tridecanoate	
Mobile phase	Ammonium tetradecanoate	
Mobile phase	Ammonium pentadecanoate	
Mobile phase	Ammonium hexadecanoate	
Mobile phase	Ammonium heptadecanoate	
Mobile phase	Ammonium octadecanoate	
Mobile phase	Ammonium nonadecanoate	
Mobile phase	Ammonium eicosanoate	
Mobile phase	Ammonium heneicosanoate	
Mobile phase	Ammonium docosanoate	
Mobile phase	Ammonium tricosanoate	
Mobile phase	Ammonium tetracosanoate	
Mobile phase	Ammonium pentacosanoate	
Mobile phase	Ammonium hexacosanoate	
Mobile phase	Ammonium heptacosanoate	
Mobile phase	Ammonium octacosanoate	
Mobile phase	Ammonium nonacosanoate	
Mobile phase	Ammonium triacontanoate	
Mobile phase	Ammonium hentriacontanoate	
Mobile phase	Ammonium dotriacontanoate	
Mobile phase	Ammonium tritriacontanoate	
Mobile phase	Ammonium tetratriacontanoate	
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